ABSTRACT OF THE DISCLOSURE

The invention provides a method of fabricating a three-dimensional microstructure close to the designed shape, using a focused charged-particle beam. This is achieved by reducing the effects of etching and deposition which vary according to various conditions when a processing work is performed. The invention also provides a system for implementing this method. The method starts with performing a provisional processing work based on data about the designed 3D shape of the 3D structure by controlling the processing conditions including the accelerating voltage of the charged particles, beam current, scan rate, dot-to-dot interval, and dot wait time. In this way, a prototypic structure is created. Then, the shape of this prototypic structure is compared with the designed shape. A non-provisional processing work is carried out while correcting the processing conditions so as to correct the differences. CAD data is used as the data about the designed 3D shape of the 3D structure. Plural sets of data about two-dimensional shapes are found by differentiation. A processing work is carried out by controlling the irradiation position of the charged-particle beam based on the sets of data about the two-dimensional shapes.